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This issue of the Australian U.F.O. Bulletin begins with the personal "Lecture Notes" of Professor Hermann Oberth who was codesigner of the V2 Rocket and who taught rocketry to Wernher von Braun. Oberth was one of the first top scientists to recognise the UFO Riddle. Also continuing in this issue "Science in Default" presented to the 134th Meeting of the American Association for the Advancement of Science by the late Professor James E. McDonald.

LECTURE NOTES FOR LECTURE ABOUT FLYING SAUCERS (1954).

by Professor Hermann Oberth

1. Observations: For centuries people have seen strange, shining objects in the sky. The oldest reports are found from PLINIUS and SENECA, according to the BASLER National Newspaper, and have been named "Shining Shields".

There are about 50 observations known from the time before World War II. Then the number of appearances increased; the Allies thought it was a German secret weapon, and the Germans thought it was one of the Allies. Since 1947, the reports of eyewitnesses increased considerably. It is said by English Air Chief Marshal Lord Dowding that 10,000 reports had crossed his desk by 1953.

The appearances are usually described as disks, sometimes as balls or ELLIPSOIDS. It sometimes happens that these disks placed one upon the other, the largest in the centre, the smaller toward the ends, form an object the shape of a cigar, which flies away with high speed. Sometimes they stop and untie separate disks. The disks fly in a manner as if the drive is acting perpendicular to the plane of the disk; when they are suspended over a certain terrain they keep horizontal; when they fly very quickly, they tilt and fly with the plane directed forward. In sunlight, which is brighter than their own gleaming, they appear glittering like metal. They are dark orange and cherry red at night if there is not much power necessary for the particular movement, for instance, when they are suspended calm. Then, they also do not shine as much. If more driving power is necessary, the shining increases and they appear yellow, yellow-green, green like a copper flame, and in a state of highest speed or acceleration extremely white. Sometimes they suddenly blink or extinguish.

Their speed is sometimes very high, 19 km/sec. has been measured with wireless measuring instruments (radar). Accelerations are so high that no man could stand it; he would be pressed to the wall and bruised. The accuracy of such measurements has been doubted. If there would be only 3 or 4 measurements I would not rely upon them and would wait for further measurements, but I know of more than 50 such measurements; the wireless sets (radar) which are used in all fighters, cannot be so inaccurate that the information obtained with them can be doubted completely. (to be continued)

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(continuing)

SCIENCE IN DEFAULT:

22 Years of Inadequate UFO Investigations.
-by: the late Professor McDonald-

ILLUSTRATIVE CASES.

The following treats in detail the four principal UFO cases referred to in my Symposium talk. They are presented as specific illustrations of what I regard as serious shortcomings of case investigations in the Condon Report and in the 1947-69 Air Force UFO program.

My principal conclusions are that scientific inadequacies in past years of UFO investigations by Air Force Project Bluebook have not been remedied through publication of the Condon Report, and that there remain scientifically very important unsolved problems with respect to UFOs. The investigative and evaluative deficiencies illustrated in the four cases examined in detail are paralleled by equally serious shortcomings in many other cases in the sample of about 90 UFO cases treated in the Condon Report. Endorsement of the conclusions of the Condon Report by the National Academy of Sciences appears to have been based on entirely superficial examination of the Report and the cases treated therein. Further study conducted on a much more sound scientific level is needed.

CASE 1. USAF RB-47, Gulf Coast Area, September 19-20, 1957.

Brief summary: An Air Force RB-47, equipped with ECM (Electronic Countermeasures) gear, manned by six officers, was followed over a total distance in excess of 600 miles and for a time period of more than an hour, as it flew from near Gulfport, Mississippi, through Louisiana and Texas, and into southern Oklahoma. The U.F.O. was, at various times, seen visually by the cockpit crew (as an intense white or red light), followed by ground radar, and detected on ECM monitoring gear aboard the RB-47. Simultaneous appearances and disappearances on all three of those physically distinct "channels" mark this UFO case as especially intriguing from a scientific viewpoint. The incident is described as Case 5 in the Condon Report and is conceded to be unexplained. The full details, however, are not presented in that Report.

SUMMARY OF THE CASE.

The case is long and involved and filled with well-attested phenomena that defy easy explanation in terms of present-day science and technology. The RB-47 was flying out of Forbes AFB, Topeka, on a composite mission including gunnery exercises over the Texas-Gulf area, navigation exercises over the open Gulf, and ECM exercises in the return trip across the south-central U.S. This was an RB-47 carrying a six-man crew, of whom three were electronic warfare officers manning ECM (Electronic Countermeasures) gear in the aft portion of the aircraft. One of the extremely interesting aspects of this case is that electromagnetic signals of distinctly radar-like character appeared definitely to be emitted by the U.F.O., yet it exhibited performance characteristics that seem to rule out categorically its having been any conventional or secret aircraft.

I have discussed the incident with all six officers of the crew - Lewis D. Chase, Pilot, Spokane, Washington. James H. McCoid, Co-pilot, Offutt AFB. Thomas H. Hanley, Navigator, Vandenberg AFB. John J. Provenzano, No. 1. Monitor, Wichita. Frank B. McClure, No. 2. Monitor, Offutt AFB. Walter A. Tuchscherer, No. 3. Monitor, Topeka.

Chase was a Major at the time; I failed to ask for information on 1957 ranks of the others. McClure and Hanley are currently Majors, so might have been Captains or Lieutenants in 1957. All were experienced men at the time. Condon project investigators only talked with Chase, McCoid and McClure, I ascertained. In my checking it proved necessary to telephone several of them more than once to pin down key points; nevertheless the total case is so complex that I would assume that there are still salient points not clarified either by the Colorado investigators or by myself. Unfortunately there appears to be no way at present to locate the personnel involved in ground-radar observations that are a very

important part of the whole case. I shall discuss that point below.

The incident is most inadequately described in the Condon Report. The reader is left with the general notion that the important parts occurred near Fort Worth, an impression strengthened by the fact that both Crow and Thayer discuss meteorological data only for that area. One is also left with no clear impression of the duration which was actually over an hour. The incident involved an unknown airborne object that stayed with the RB-47 for over 600 miles. In case after case in the Condon Report, close checking reveals that quite significant features of the cases have been glossed over, or omitted, or in some instances seriously misrepresented. I submit that to fail to inform the reader that this particular case spans a total distance range of some 600 miles and lasted well over an hour is an omission difficult to justify.

From my nine separate interviews with six crew members, I assembled a picture of the events that makes it even more puzzling than it seems on reading the Condon Report -- and even the latter account is puzzling enough.

Just as the aircraft crossed the Mississippi coast near Gulfport, McClure, manning the no-2. monitor, detected a signal near their 5 o'clock position (aft of the starboard beam). It looked to him like a legitimate ground-radar signal, but corresponded to a position out in the Gulf. This is the actual beginning of the complete incident; but before proceeding with details it is necessary to make quite clear that kind of equipment we shall be talking about as we follow McClure's successive observations.

The ECM gear used in RB-47s in 1957 is not now classified; the no.2. monitor that McClure was on, he and the others pointed out, involved an ALA-6 direction-finder with back-to-back antennas in a housing on the undersurface of the RB-47 near the rear, spun at either 150 or 300 rpm as it scanned in azimuth. Inside the air-craft, its signals were processed in an APR-9 radar receiver and an ALA-5 pulse analyser. All later references to the no.2. monitor imply that system. The no.1. monitor employed an APD-4 direction finding system, with a pair of antennas permanently mounted on either wing tip. Provenzano was on the no.1. monitor. Tuchscherer was on the no.3. monitor whose specifications I did not ascertain because I could find no indication that it was involved in the observations.

Returning now to the initial features of the UFO episode, McClure at first thought he had 180 degree ambiguity in his scope, i.e., that the signal whose lobe painted at his 5 o'clock position was actually coming in from 11 o'clock position, perhaps from some ground-radar in Louisiana. This suspicion, he told me, was temporarily strengthened as he became aware that the lobe was moving upscope.

(It is important here and in features of the case cited below to understand how a fixed ground-radar paints on the ECM monitor scope as the reconnaissance aircraft flies toward its general direction. Suppose the ground-radar is, at some instant, located at the 1 o'clock position relative to the moving aircraft, i.e. slightly off the starboard bow as the aircraft flies along, the relative bearing steadily changes, so that the fixed ground unit is "seen" successively at the 2 o'clock, the 3 o'clock, and the 4 o'clock positions, etc. The lobe paints on the monitor scope at these successive relative azimuths, the 12 o'clock position being at the top of the scope, 3 o'clock at the right, etc. Thus any legitimate signal from a fixed ground-radar must move downscope excluding the special cases in which the radar is dead ahead or dead astern. Note carefully that we deal only with direction finding gear. Range is unknown; we are not here speaking of an airborne radar set, just a radar-frequency direction finder. In practice, range is obtained by triangulation computations based on successive fixes and known aircraft speed.)

As the lobe continued moving upscope, McClure said the strength of the incoming signal and its pulse characteristics all

tended to confirm that this was some ground unit being painted with 180 degree ambiguity for some unknown electronic reason. It was at 2800 megacycles, a common frequency for S-band search radar.

However, after the lobe swung dead ahead, his earlier hypothesis had to be abandoned for it continued swinging over to the 11 o'clock position and continued downscope on the port side. Clearly, no 180 degree ambiguity was capable of accounting for this. Curiously, however, this was so anomalous that McClure did not take it very seriously and did not at that juncture mention it to the cockpit nor to his colleagues on the other two monitors. This upscope downscope "orbit" of the unknown was seen only on the ALA-6, as far as I could establish. Had nothing else occurred, this first and very significant portion of the whole episode would almost certainly have been forgotten by McClure.

The signal faded as the RB-47 headed northward to the scheduled turning point over Jackson, Mississippi. The mission called for simulated detection and ECM operations against Air Force ground radar units all along this part of the flight plan, but other developments intervened. Shortly after making their turn westward over Jackson, Mississippi, Chase noted what he thought at first were the landing lights of some other jet coming in from near his 11 o'clock position, at roughly the RB-47's altitude. But no running lights were discernible and it was a single very bright white light, closing fast. He had just alerted the rest of the crew to be ready for sudden evasive maneuvers, when he and McCoid saw the light almost instantaneously change directions and rush across from left to right at an angular velocity that Chase told me he'd never seen matched in all of his flight experience. The light went from their 11 o'clock to their 2 o'clock position with great rapidity and then blinked out.

Immediately after that, Chase and McCoid began talking about it on the interphone and McClure, recalling the unusual 2800 megacycle signal that he had seen over Gulfport, now mentioned that peculiar incident for the first time to Chase and McCoid. It occurred to him at that point to set his no.2. monitor to scan at 2800 mcs. On the first scan, McClure told me, he got a strong 2800 mcs signal from their 2 o'clock position, the bearing on which the luminous unknown object had blinked out moments earlier.

Provenzano told me that right after that they had checked out no.2. monitor on valid ground radar to be sure it was not malfunctioning and it appeared to be in perfect order. He then checked on his no.1. monitor and also got a signal from the same bearing. There remained, of course, the possibility that just by chance, this signal was from a real radar down on the ground and off in that direction. But as the minutes went by, and the aircraft continued westward at about 500 kts, the relative bearing of the 2800 mcs source did not move downscope on the no.2. monitor, but kept up with them.

This quickly led to a situation in which the entire 6-man crew focussed all attention on the matter; the incident is still vivid in the minds of all the men, though their recollection for various details varies with the particular activities they were engaged in. Chase varied speed, to see if the relative bearing would change, but nothing altered. After over a hundred miles of this, with the 2800 mcs source keeping pace with the aircraft, they were getting into the radar-coverage area of the Carswell AFB GCI (Ground Controlled Intercept) unit and Chase radioed that unit to ask if they showed any other air traffic near the RB-47. Carswell GCI immediately came back with the information that there was apparently another aircraft about 10 miles from them at their 2 o'clock position.

This information, each of the men emphasized to me in one way or another, made them a bit uneasy for the first time. I asked McClure a question that the Colorado investigators either failed to ask or did not summarise in their Report. Was the signal in all respects comparable to that of a typical ground radar? McClure told me that this was what baffled him the most, then and now (to page 6)

(concluding) UFO OCCUPANTS SEEN NEAR HOSPITAL

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Later we spoke separately to Mrs. Wilson, who continued the story from that point.

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"I noticed Miss Kendall standing at the window and wondered what she was looking at. In fact, I was just going to see when she beckoned to me, and then I saw this great big light over the patio outside the children's ward. I'd say it was quite a bit larger than a car. (By the estimate of both witnesses, the object spanned a width of about five windows of the children's ward. This gave it a diameter of at least 50 feet.) It looked circular in shape and the far side seemed to be higher than the side near us. It was moving around slowly and then it started to move away. I didn't really see any top or bottom to it. It was all just tremendously bright. Some people say we were looking at a plastic bag with candles in it, put there as a joke. But it would take a million candles to make it as bright as that."

Mrs. Wilson did not see the "necklace" of lights described by Miss Kendall, nor could she see inside the object and consequently saw no human-like figures. Since this appeared to be a serious difference in the two reports, we asked Miss Kendall in a second interview how she might account for it.

"I think Mrs. Wilson must have come just a bit too late," she "After the thing circled four or five times, it started going away, farther along by the roof of the children's ward, and I couldn't see inside it either."

Not being precisely sure how close the object was when Miss Kendall observed it, Mrs. Wilson could not say whether or not this did explain her failure to see the occupants. But the fact that she came to the window in time to see the craft circling, and then saw it move away, suggests the explanation of distance does not quite fill the bill. So without intending to add anything to the narrative that the witnesses themselves did not observe, we offer another possible explanation merely for the sake of conjecture.

It has been noticed in UFO sightings that the object when stationary gives out less light than when in motion. This rule, of course, is not invariable. UFOs emanating no light at all have been seen moving at high speed, while others glowing brightly have been seen to hover and even to land.

But the increase of light with motion does appear to be a general characteristic, and it is one that may have prevented Mrs. Wilson seeing the interior of the craft outside the hospital. All of Miss Kendall's observations in detail were made before the craft started to move. After that she, like Mrs. Wilson, was conscious only of the light and motion of the craft. In other words, by the time Mrs. Wilson reached the window the brightness of the object may have increased to an extent that all details were obscured. It would have been like staring at the headlights of a car. All one could have said about the car itself was that its lights were bright.

This in turn may account for the fact that, unlike Miss Kendall, Mrs. Wilson felt only alarm when she looked at the object. Some maintain that at times through some kind of chemistry UFOs are able to exert a calming influence. But in this case it appears to have been the peaceful manner of the two occupants that dispelled any fear Miss Kendall might have felt.

At this point two other nurses on the floor, Mrs. Clackson and Mrs. Appleby, hearing the excited comments of the first two, rushed to another window of the ward but could only see what they agreed was a "bright light" receding in the distance. Seconds later two other nurses also looked out a window but (to page 6) saw nothing. Apparently by that time the object had moved behind trees that border the hospital.

A significant factor of this sighting is that none of the witnesses made any effort to publicize it, yet at the same time made no pretence of being secretive. Knowing of our interest in the subject, another nurse at the hospital who is a friend of ours phoned us a little later the same morning and it was through this connection that we arranged the interview which was later reported in the Victoria press....

Science in Default (from page 4).

All the radar signature characteristics, as read out on his ALA-5 pulse analyser, were completely normal -- it had a pulse repetition frequency and pulse width like a CPS-6B and even simulated a scan rate.' But its intensity, McClure pointed out, was so strong that it would have had to have an antenna bigger than a bomber to put out that much signal. And now, the implications of the events over Gulfport took on new meaning. The upscope-downscope sweep of his no.2. monitor lobe implied that this source, presuming it to be the same one now also being seen on ground radar at Carswell GCI, had flown a circle around the RB-47 at 30-35,000 ft. altitude while the aircraft was doing about 500kts.

Shortly after Carswell GCI began following the two targets, RB-47 and unknown, still another significant action unfolded. McClure suddenly noted the lobe on the no. 2. monitor was beginning to go upscope, and almost simultaneously, Chase told me, GCI called out that the second airborne target was starting to move forward. Keep in mind that no visual target was observable here; after blinking out at the 12 o'clock position, following its lightning-like traverse across the nose of the aircraft, no light had been visible. The unknown now proceeded to move steadily around to the 12 o'clock position, followed all the while on the no.2. monitor and on the GCI scope down at Carswell near Fort Worth.

As soon as the unknown reached the 12 o'clock position, Chase and McCoid suddenly saw a bright red glow "bigger than a house", Chase said, and lying dead ahead, precisely the bearing shown on the passive radar direction-finder that McClure was on and precisely the bearing now indicated on the GCI scope.

Three independent sensing systems were at this juncture giving seemingly consistent indications: two pairs of human eyes, a ground radar, and a direction-finding radar receiver in the aircraft.

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Wrs. Wilson sesing the interior of the craft outside the hospital. All of Miss Kandall's observations in detail were made before the craft started to may. After that abe, like Mrs. Wilson, was AUSTRALIAN U.F.O. SYMPOSIUM material to be made available after the event

As noted in our August '71 Bulletin, the South Australian Division of the Australian and New Zealand Association for the Advancement of Science Inc. is holding a symposium on U.F.Os at the University of Adelaide on Saturday, October 30th, 1971.

We understand that tapes of the entire proceedings of the symposium, plus a paper from the late Professor McDonald, will be available after October 30th.

A charge will necessarily be made for this material. It is suggested that anyone interested in obtaining this should send their \$2.50, with their order, to ANZAAS. Not to us!! Write to ANZAAS, Martin Building, 141 Rundle St. Adelaide, S.A., 5000.